

## **LINE-LEVEL PATH PROTECTION IN THE OPTICAL LAYER**

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### **Abstract of the Disclosure**

Systems and methods provide very fast protection switching while leaving selected traffic unprotected. When a link fails, only certain pre-selected paths are rerouted at the point of failure. Other traffic is left unprotected or protected at another layer. Signaling of the failure and the rerouting is performed for the link as a whole rather than for the individual paths. Signaling occurs at a first layer of a digital transmission hierarchy while path rerouting switching occurs at a second hierarchical layer above the first layer. In certain implementations, K1/K2 bytes are used in signaling at the optical line layer (OC-n), while only protected High-Order paths (STS) and Low-Order paths (VT) are protected by the protection switch.

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